

Patent Claims

1. Surface coated hard material with a hardness ($HV_{0.2}$) ≥ 10 GPa, the surface of which has a polysiloxane coating.

5

2. Surface coated hard material as defined in Claim 1, characterized in that the hardness ($HV_{0.2}$) > 15 Gpa.

10

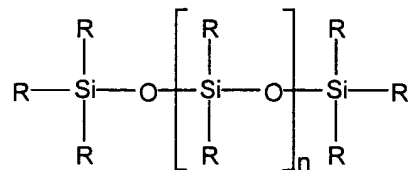
3. Surface coated hard material as defined in Claim 1 or Claim 2, characterized in that aluminum oxide is the basis of the hard material.

15

4. Surface coated hard material as defined in Claim 3, characterized in that the basis of the hard material consists of electro-corundum, monocrystalline corundum, sintered corundum, sintered alumina and/or calcined alumina, or mixtures of these.

20

5. Surface coated hard material as defined in one of the Claims 1 to 4, characterized in that the surface of the hard material is coated with a polysiloxane of the formula:



6. Surface coated hard material as defined in Claim 5,
characterized in that the R radical is hydrogen, an alkyl and/or
phenyl group.

5 7. Surface coated hard material as defined in Claim 5,
characterized in that n is an integer between 1 and 100.

8. Surface coated hard material as defined in one of the
Claims 5 to 7, characterized in that the R radical is
preferably a methyl group.

10 9. Surface coated hard material as defined in ~~one of the~~
~~Claims 1 to 8~~, characterized in that the quantity of
polysiloxane on its surface amounts to 0.001 to 10%-wt
relative to the hard material that is used.

15 10. Surface coated hard material as defined in Claim 9,
characterized in that the quantity of polysiloxane amounts
to 0.01 to 5%-wt.

20 11. Surface coated hard material as defined in Claim 9,
characterized in that it is preferred that the quantity of
polysiloxane amount to 0.1 to 1.5%-wt.

25 12. Method for producing a hard material as defined on ~~one of~~
~~the Claims 1 to 11~~, characterized in that a hard material

grain is mixed with a polysiloxane, a polysiloxane emulsion, or a diluted polysiloxane emulsion.

5 13. Method as defined in Claim 12, characterized in that the hard grain is subjected to a heat treatment in a temperature range between 100°C and 600°C prior to the mixing process.

10 14. Method as defined in Claim 12 or Claim 13, characterized in that once coated with polysiloxane the hard grain is dried in a temperature range between 100°C and 400°C.

15 15. Method as defined in Claim 14, characterized in that the drying temperature is between 100°C and 200°C.

16. Method as defined in ~~one of the Claims 12 to 15,~~ ^{Claim 12} characterized in that an aqueous polysiloxane emulsion is used.

20 17. Method as defined in ~~one of the Claims 12 to 16,~~ ^{Claim 12} characterized in that the viscosity of the polysiloxane, the polysiloxane emulsion, or the diluted polysiloxane emulsion that is used is below 1500 mPa*s.

25 18. Method as defined in Claim 17, characterized in that the viscosity of the polysiloxane, the polysiloxane emulsion,

or the diluted polysiloxane emulsion that is used is below
1000 mPa*s.

19. Use of a hard material as defined in ~~one of the Claims 1 to~~ ^{Claim 1}
5 ~~11~~ as a wear-reducing agent in lacquer coatings based on
phenol, melamine, aldehyde, urea, formaldehyde, epoxy,
polyester, ^{and} ~~and/or~~ polyurethane resins.

20. Use of a hard material as defined in ~~one of the Claims 1 to~~ ^{Claim 1}
10 ~~11~~ as a wear-reducing agent in transparent overlay papers
to manufacture wear-resistant lacquer coatings.